IN THE CLAIMS:

1. (previously amended) A method for forming a semiconductor device structure in a semiconductor layer, comprising:

forming a first trench of a first width and a second trench of a second width in the semiconductor layer;

growing a first insulator liner in the first trench and a second insulator liner in the second trench;

forming a mask over the second trench;

etching at least a portion of the first insulator liner while the mask is over the second trench;

removing the mask; and

depositing an insulating layer in the first trench and the second trench.

2. (original) The method of claim 1, wherein the first width is less than the second width.

3. (original) The method of claim 1, wherein the step of etching comprises completely removing the first insulator liner.

4. (original) The method of claim 1, wherein the step of etching results in leaving at least one hundred Angstroms of the first insulator liner.

5. (previously amendment) The method of claim 1, wherein the step of growing the first insulator liner and the second insulator liner comprises growing oxide in the first trench and the second trench.

6. (original) The method of claim 1, wherein the step of etching comprises dipping the semiconductor device structure in hydrofluoric acid.

7. (original) The method of claim 1, wherein the step of etching comprises applying a dry etch chemistry to the semiconductor device structure.

8. (original) The method of claim 1, wherein the insulator layer comprises high density plasma oxide fill.

9. (original) The method of claim 1, further comprising forming a barrier layer and a stress relief layer over the semiconductor layer in areas adjacent to the first trench and the second trench.

10. (original) The method of claim 1, further comprising forming a pad nitride and pad oxide over the semiconductor layer prior to forming the first trench and the second trench, and wherein the step of forming the first trench and the second trench comprises etching through selected portions of the pad nitride and the pad oxide and into the semiconductor layer.

15. (previously amended) A method for forming a semiconductor device structure in a semiconductor layer, comprising:

forming a first trench of a first width and a second trench of a second width in the semiconductor layer, the first width being less than the second width;

growing a first insulator liner in the first trench and a second insulator liner in the second trench;

forming a mask over the second trench; and

etching at least a portion of the first insulator liner while the mask is over the second trench.

16. (original) The method of claim 15, wherein the step of etching comprises a wet etch.

17. (original) The method of claim 16, wherein the step of etching comprises dipping the semiconductor device structure in hydrofluoric acid.

18. (original) The method of claim 15, wherein the etching comprises a dry etch.

19. (previously amended) The method of claim 15, wherein the step of growing the first insulator liner and the second insulator liner comprises growing oxide in the first trench and the second trench.

20. (previously amended) The method of claim 15, wherein:

the semiconductor layer has a top surface;

the second trench has a corner where the trench adjoins the top surface of the semiconductor layer; and

the step of growing the first insulator liner and the second insulator liner comprises rounding of the corner of the second trench.

21. (original) The method of claim 20, wherein the corner is semiconductor.

22. (original) The method of claim 15, wherein the step of etching comprises leaving at least 100 Angstroms of the first insulating liner.

23. (original) The method of claim 15, wherein the step of etching comprises removing the first insulating liner.

24. (original) The method of claim 15, further comprising forming a barrier layer and a stress relief layer over the semiconductor layer in areas adjacent to the first trench and the second trench.

25. (original) The method of claim 24, wherein the barrier layer comprises nitride and the stress relief layer comprises oxide.

26. (previously amended) A method for forming a semiconductor device structure in a semiconductor layer, comprising:

forming a first trench of a first width in the semiconductor layer;

forming a second trench of a second width greater than the first width in the second semiconductor layer;

growing a first insulator liner in the first trench and a second insulator liner in the second trench;

etching a portion of the first insulator liner; and

depositing an insulating layer in the first trench.

27. (original) The method of claim 26 further comprising

forming a mask over the second trench prior to the step of etching; and

removing the mask prior to the step of depositing.

28. (original) The method of claim 26, wherein the step of etching further comprises etching a portion of the second insulator liner and leaves at least 50 Angstroms of the first insulator liner and 50 Angstroms of the second liner.

29. (previously amended) A method for forming a semiconductor device structure in a semiconductor layer, comprising:

forming a first trench of a first width in the semiconductor layer;

forming a second trench of a second width in the second semiconductor layer;

growing a first insulator liner in the first trench and a second insulator liner in the second trench;

etching a portion of the first insulator liner and a portion of the second insulator liner; and

depositing an insulating layer in the first trench and the second trench.

30. (original) The method of claim 29, wherein the step of etching comprises a wet etch.

31. (original) The method of claim 30, wherein the wet etch uses hydrofluoric acid.

32. (original) The method of claim 29, wherein the first insulator and the second insulator liner comprises thermal oxide.

33. (original) The method of claim 29, wherein the step of depositing comprises filling the first trench and second trench.

34. (original) The method of claim 33, wherein the insulating layer comprises high density plasma oxide.

38. (original) A method for forming a semiconductor device structure in a semiconductor layer having a top surface, comprising:

forming a first trench of a first width in the semiconductor layer and having a first corner at the surface of the semiconductor layer;

forming a second trench of a second width greater than the first trench in the second semiconductor layer and having a second corner at the surface of the semiconductor layer;

growing a first insulator liner in the first trench and a second insulator liner in the second trench to achieve a radius of curvature of at least 200 Angstroms in the first and second corner;

etching a portion of the first insulator liner and a portion of the second insulator liner; and

depositing an insulating layer in the first trench and the second trench that fills the first and second trenches, wherein the insulating layer is free of voids.

39. (original) The method of claim 38, wherein the first insulator liner and the second insulator liner are thermal oxide.

40. (original) The method of claim 38, wherein the step of etching leaves the first insulator liner and the second insulator liner at a thickness sufficiently small to allow for completely filling the first trench with the insulating layer without voids in the insulating layer.

41. (original) The method of claim 40, wherein the insulating layer comprises high density plasma oxide.

42. (original) The method of claim 38, wherein the step of etching is further characterized as leaving at least 50 Angstroms of the first insulator liner and the second insulator liner.